School Bus Information Council

Comments Concerning an

Advisory from Florida Department of Education Concerning Potential Structural Weld Defects on Certain Carpenter Manufacturing School Buses

April 14, 2003

1. Recently, a 1991 Type "D" school bus manufactured by Carpenter Manufacturing Company was involved in a single-vehicle, rollover crash in Alachua County, Florida. [A Type "D" school bus has the entrance door forward of the front wheels, with the engine in the rear or next to the driver's position.]

2. There were no students on board the bus at the time of the crash. During the rollover event, the bus rolled onto its top, and the top collapsed down to the seat line. (see attached photographs)

3. Federal Motor Vehicle Safety Standard 220, "School Bus Rollover Protection," requires school buses to have roof strength capable of supporting 1-1/2 times the weight of the bus. This standard has been in effect since April 1, 1977.

4. Post-crash inspection of the school bus involved in the crash, revealed that a large percentage of structural welds in the roof structure had failed. (see attached photographs)

5. The roof collapse observed in the above crash, along with the failed structural welds, suggests that the vehicle most likely would not have complied with the requirements of FMVSS No. 220 at the time of the crash. It is not known whether the school bus met the requirements of FMVSS No. 220 when it was manufactured.

6. Immediately after the crash, the school bus was inspected by officials from the Alachua County School District and the Florida Department of Education. After observing the crash bus, the Department requested assistance from the National Highway Traffic Safety Administration's (NHTSA) Office of Defects Investigation. NHTSA has initiated a Special Crash Investigation of this matter, which may take several months to complete.

7. Personnel from the Alachua County School District and the Florida Department of Education also conducted inspections of a sample of other Carpenter school buses in Florida that were built using the same design. During those inspections, a number of deficient structural welds were observed. The subject welds are located at the junction of the vertical side posts (between the windows) and the horizontal structural member (the "carlin" rail) above the windows. Photographs

to illustrate the post-crash condition of the bus and the weld locations are attached.

8. The most severe defective welds observed were cracked all the way through, resulting in no remaining joint between the two structural members. Others were partially cracked or not cracked at all. As a comparison, nearly all of the side posts on the bus involved in the crash were detached from the roof structure as a result of broken welds.

9. Other school buses that have the same structural design and, therefore, could have weld failures appear to be any Carpenter Type "C" and "D" school bus built at Carpenter's Mitchell, Indiana, plant from 1986 to late 1995. [A Type "C" school bus has the entrance door behind the front wheels, with the engine in the front with a hood and front fenders.]

10. The state of Florida purchased approximately 689 Type "C" buses and 58 Type "D" buses from Carpenter Manufacturing during this time period. At this time, it is not known how many of these Carpenter school buses, which are now between 8 and 17-years old, are still in operation in Florida.

11. Carpenter school buses built from approximately August 1995 to 1998 at Carpenter's Richmond, Indiana, plant were reportedly built using a significantly different design -- single-piece body bows that required no structural welds. This later design can be readily identified by knowledgeable school bus technicians, and there is no evidence to suggest that the buses with this later design have similar potential defects.

12. Carpenter Manufacturing is no longer in business. Thus, there are no options available from the original manufacturer to help in positively identifying all of the buses that may have defective welds. Also, there are no options for having the manufacturer rectify the problem.

13. On April 14, 2003, the Florida Department of Education notified all Florida school districts of the above information and strongly recommended that each potentially affected Carpenter school bus be removed from service for inspection as soon as possible. It was noted that <u>all</u> subject welds should be inspected to determine if the bus is safe to return to service. Complete inspection requires the removal of each dome light panel above the side windows. If any defective welds are identified, the Department strongly recommends that the bus be kept out of service until a remedy is identified.

14. While this situation represents a significant hardship to Florida school districts in terms of taking school buses out of service for inspection, it is essential that it be done in order to ensure that children in school buses are provided the highest level of safety.

15. Parents and others should be reminded that school buses remain by far the safest way for children to get to and from school and school-related activities. Every national and internationally recognized motor vehicle safety organization has expressly acknowledged that school buses are the safest mode of ground transportation in America. In a recent study, the National Research Council of the National Academies of Science concluded that over 800 school-aged children die each year because they walk, bicycle or ride to-and-from school in a passenger motor vehicle with a parent or friend -- a stark contrast to the 6 school bus passenger fatalities per year that we experience nationwide. This contrast is even more striking when you consider that 50 percent of the 50 million school children use school buses to go to and from school each day, and the other 50 percent use one of those other, less-safe modes.

16. This action in Florida to inspect all Carpenter Manufacturing school buses built at the Mitchell, Indiana, plant from 1986 to late 1995 for potential broken structural welds shows the willingness of the school bus transportation industry to take every possible action, no matter how onerous, to ensure the safety of the children on school buses.

17. The School Bus Information Council believes it would be prudent for other states that have school buses manufactured by Carpenter Manufacturing at its Mitchell, Indiana, plant from 1986 to late 1995 also to initiate inspection programs of those school buses to ensure that there are no broken or defective welds in the roof structure.

18. The School Bus Information Council believes these inspections to identify any potentially dangerous school buses will result in the removal of such vehicles from operation until a remedy can be determined.

19. The school bus industry will work with the safety experts at the National Highway Traffic Safety Administration to assist in their investigation and will closely follow any additional recommendations that may result.